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| 09/556,280      | 04/24/2000  | Henry F. McInerney   | L0532/7010          | 7997             |

7590 05/18/2004  
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Boston, MA 02210

EXAMINER

ROSENBERGER, RICHARD A

| ART UNIT | PAPER NUMBER |
|----------|--------------|
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2877

DATE MAILED: 05/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/556,280

Applicant(s)

MCINERNEY ET AL.

Examiner

Richard A Rosenberg

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 08 December 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 12-23 and 86-124 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 12-23 and 86-124 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

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1. It is noted that there was a typographical error on the previous office action.

In the initial heading paragraph of the rejection only the Liang reference (US 5,719,948) was given, although the body of the statement of the rejection included two additional references, Shaw (US 3,663,813) and Falls (US 4,567,370). Any confusion resulting from this action is regretted.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 12-23 and 86-124 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liang (US 5,719,948) in view of Shaw (US 3,663,813), Falls (US 4,567,370) and Stenzel et al (US 4,146,792).

Liang shows using device for detecting a mark on a substrate, the mark including at least one light-sensitive compound that is responsive to at least one predetermined excitation wavelength of light and that, when excited with light having the predetermined wavelength(s) of light emits or absorbs light at at least one predetermined emission or absorption wavelength of light; Liang shows the

claimed emission ; note lines 4-7 of the abstract which discusses "graphic images and/or characters [which] have been previously made with fluorescent substances that may be invisible under ordinary visible light, but are rendered detectable by the ultraviolet light."

The Liang et al reference teaches a detector which operates in two modes, one capturing a visible light image (a "video mode") and one capturing an image with the emission or absorption (a "snapshot mode"); "[t]he detector may be capable of detecting both fluorescent images and normal visible images, and the authentication system may incorporate switching mechanisms to allow multiplexed acquisition of fluorescent and normally visible images" (abstract, lines 17-21).

For the video mode, Liang shows a detector for detecting an image of at least a portion of the substrate; detector 40 can be "a photodiode array [or] a CCD camera" (column 6, lines 42-43), and is disclosed as producing a "conventional image detectable with visual-light illumination" (column 7, lines 59-61). There is a display (indicator 110) which "may display a processed image and/or a raw, unprocessed image of article 25 ..." (column 10, lines 18-20).

For the snapshot mode, there is a light source ("a source of UV light", abstract, lines 11-12) for irradiating the substrate. The detector (40) detects light emission or absorption from the mark after the mark has been irradiated to provide data representative of the detected light emission or absorption of the light sensitive compound in the mark; "detector 40 may be [a detector] capable of

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detecting fluorescent light from tested articles" (column 6, lines 42-44). There is a processor (110) cooperating with the snapshot mode detector, and the display (110) displays the "data" (fluorescent image); indicator 110 "may display a processed image and/or a raw, unprocessed image of . . . indicia 26" (column 10, lines 18-21).

The Liang reference discusses human observation; in the abstract there is a mention of using characters that are "readable by human readers once they are made visible" (abstract, lines 9-10); this "first-order authentication by a human observer" must include, and is intended to include, a display of both images obtained in both modes.

The Liang reference does not teach that the "processor processes the data independent of the pattern of the mark, the processor comparing the data that is independent of the pattern of the mark to a standard and rendering an authentication signal based on the comparison".

It is known in the art to use fluorescent marks on the object for authenticating articles. Falls, Shaw and Stenzel et al show this. In Falls there is a mark on an object containing two light-sensitive compounds, which are detected and "[s]hould one or both of these selected characteristic radiations 50 and 52 be absent or of different wavelengths, one or both of the respective displays 28 and 30 becomes actuated, indicating a 'fail' for the just measured sample 12" (column 4, lines 8-12). Similarly, Shaw teaches a coded mark which comprises a plurality of different light sensitive (fluorescent) compounds which are detected and compared

to a standard to determine whether the object is encoded based on the characteristics of the fluorescence of the marks. Stenzel et al teaches providing papers to be authenticating "at one or more points" fluorescent markers that may comprise "a mixture of several substances producing fluorescence in a narrow band may advantageously be provided, and the mixture ratio may serve as an additional security." (column 6, lines 24-27); such materials are "marks". In all three the processing is not based upon the shape of the mark; Shaw is explicit: "the shape of the symbol marking area is immaterial" (column 1, line 24) and "[i]t is not necessary that the symbol have a particular shape, such as a number or letter" (column 1, line 25-26), although Shaw also discloses that the marks may have a particular shape: "... the coding component is also useful with ... shaped symbols" (column 1, lines 27-28). Stenzel et al explicitly mentions the use of the ratio (quotient) of fluorescent peak wavelengths (column 8, lines 35-38), and teaches such a quotient has the advantages such as "dirt on the paper, variations in the brightness of the lamp" do not affect the measuring accuracy (column 8, lines 38-42).

It would have been obvious to included this known coding method of product authentication with the system of Liang. This inclusion is not only known in the art, but is compatible with the marks and detection system taught by Liang. Liang teaches the marks may comprise a plurality of fluorescent materials ("[t]he process can also include printing fluorescent graphic images or characters with a

multiplicity of fluorescent substances having distinct fluorescent wavelengths"; column 4, lines 43-46) as do the coded marks of Falls and Shaw, and teaches, as do Falls, Shaw, and Stenzel et al, separate detection of the different wavelengths ("[t]he system may also . . . optical filters to select predetermined wavelengths of fluorescent light"; column 4, lines 22-24 - note "filters" and "wavelengths" are both plural). It would have been obvious to include in the system of Liang because it is would provide an additional level of security by adding an additional test of authenticity, the coded fluorescence, in a manner already largely provided for by the system of Liang and, as shown by the other references, otherwise known in the art.

Liang uses a computer as the processing means; having the processing means perform the processing for recognizing the code as taught by Falls, Shaw and Stenzel et al, using, as in standard practice with such computers, appropriate memory in the computer to store the program and data in digital form. The Liang reference discusses storing the images obtained in digital form in computer memory (column 12, lines 44-49). If a permanent record is desired of the test, it would have been obvious to create one using film or the like to do so. Time and date stamping is a common practice, well known in the art.

The Liang reference teaches the light may be a strobe lamp (column 5, line 39), which is a type of flash. Other types of flash may be used as it is the provision of suitable illumination, and not the particular means to supply it, that is of functional importance.

The Liang reference teaches that "[f]or some applications it is desirable to insert other optical filters 50 (not shown) into illumination portions 15 of optical path between sources 10 and/or 20 and beam splitter 30, to select portions of the UV and/or visible/IR spectra with which to illuminate article 25" (column 5, lines 63 through column 6, line 1); selecting the filter to provide the wavelength appropriate for the particular mark would have been obvious.

Touch screens are known manners of entering data and commands into computers and computer controlled systems and it would have been obvious to use this known technique. The particular manner in which the two images are displayed, both at the same time on a split screen, alternately, in color, etc., is a matter of design choice well within the ordinary skill of those in the art.

All four references teach the use of fluorescent markers, with the functional characteristic being the fluorescence, not the particular fluorescent material or particular excitation or emission wavelength; all that the references require for their disclosed function is that the fluorescence be emitted and detectable separately from each other. Those in the art would be able to choose appropriate fluorescent materials and wavelengths among those materials known to be available. Note that Falls specifically disclose the use of a material that fluoresces in the infrared range (column 3, lines 49-51). Shaw notes infrared emission is possible (column 2, line 67). Stenzel et al also teaches that the fluorescence may be in the infrared (abstract, line 3; column 1, line 59). All three thus teach that



infrared emitting marks are within the scope of the knowledge of those in the art. Such marks that fluoresce in the infrared will not be visible except when detected by the "snapshot" detector taught by Liang et al, which detects (and does not merely illuminate) the marks. Liang et al use a CCD camera to detect the images (column 9, line 11) and teaches displaying the detected marks (column 10, lines 19-20) through the video display (column 9, line 48).

4. The remarks filed 8 December 2003 argue that the references to Falls and Shaw "show a component that Liang lacks is known in the art" (remarks, page 12, lines 24-25. While it is true the Falls and Shaw ( and Stenzel et al) do show a component that Liang lacks, the statement of the rejection does demonstrate the obviousness of the combination. The statement in the remarks that "Liang fails to suggest such a motivation" may or may not be true, but the rejection is not over Liang et al alone; it is the references taken as a whole, in light of the skill of those in the art, that must be considered, not a single reference taken in isolation of the combination and skill of those in the art.

The argument in the remarks (Page 13, lines 10-11) that Liang et al "teaches away" from the combination is not correct. A reference does not "teach away" simply because it is not applicable under 35 USC 102. Nothing in the Liang reference suggests, or would be taken as suggesting, that the use of the combination of a plurality of fluorescent materials as an authenticating means

would cease to work merely because the shape of the marks is known and is also being used for authenticating. Also, Shaw mentions that while "the shape of the symbol marking area is immaterial", "the coding component is also useful with ... shaped symbols" (column 1, lines 23-30), which teaches that the use of such fluorescent coding with shaped symbols is possible and is useful.

The remarks note (page 13, lines 25-27) that Liang does not teach or suggest using signal ratios to render an authentication result. See, however, Stenzel et al (discussed above), which does teach this use of a ratio.

The remarks argue (page 14, lines 15-16) that Liang does not teach a mark that is visible only in the snapshot mode. However, as discussed above, the references taken together as a whole do teach the use of marks that are not visible directly as they fluoresce in the infrared range, and Liang does teach displaying the image detected by the device, which detected image includes the mark. Thus The combination does provide for, using only ordinary skill in the art, such a mark.

5. Because of the citation of the reference to Stenzel et al, and due to the possibility of confusion resulting from the typographical error discussed in paragraph 1 above, this action is not being made final.

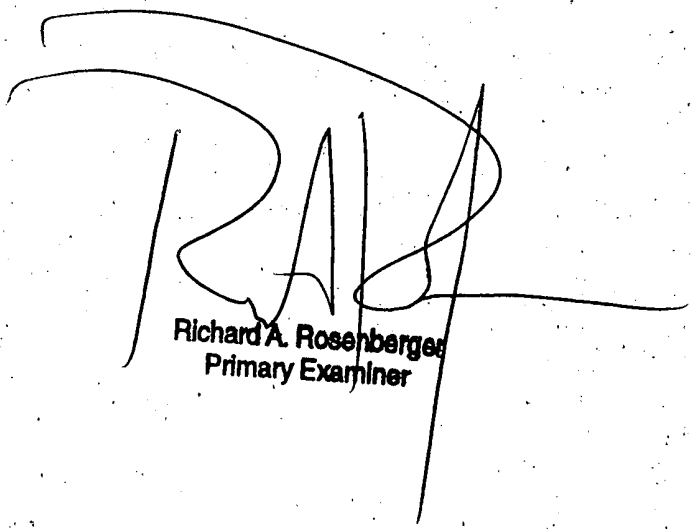
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6. Papers related to this application may be submitted to Group 2800 by facsimile transmission. The faxing of such papers must conform to the notice published in the Official Gazette, 1096 OG 30 (15 November 1989). The fax number is (703) 872-9306

Any inquiry concerning this communication or earlier communications from the examiner should be directed to R. A. Rosenberger whose telephone number is (571) 272-2428.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0956.

R. A. Rosenberger  
14 May 2004



Richard A. Rosenberger  
Primary Examiner